**Before the**
**Federal Communications Commission**
**Washington, D.C. 20054**

| | | |
|---|---|---|
| In the Matter of | ) | |
| | ) | PS Docket No. 13-229 |
| Amendment of Section 90.20(d)(34) and | ) | RM – 11635 |
| 90.265 of the Commission's Rules to | ) | |
| Facilitate the Use of Vehicular Repeater Units | ) | |

## COMMENTS OF THE COMMONWEALTH OF VIRGINIA

The Commonwealth of Virginia, Department of State Police ("Commonwealth"), by its counsel, hereby submits comments on behalf of its Statewide Agencies Radio System ("STARS") in response to the September 16, 2013 Order and Notice of Proposed Rulemaking in the above matter (FCC 13-12), inviting comments in the Notice of Proposed Rulemaking on amendments to provide for the expanded use of mobile repeaters for public safety.

## INTRODUCTION

STARS is a twenty-two state agency public safety grade statewide integrated voice and data system. STARS uses a digital trunked VHF narrowband system, which relies heavily on 700 MHz digital vehicular repeater units (DVRS) in over 3,000 public safety vehicles to support public safety communications. The Commonwealth, on behalf of STARS, wishes to offer comments in support of more VHF frequency availability for vehicular repeater units (mobile repeater stations, or "VRS"), and in support of the Commission's adoption of rules that facilitate the use of such additional frequencies.

## COMMENTS

The Commonwealth appreciates that the Commission has recognized the importance of VRS to public safety operations, and the current lack of adequate VHF spectrum for VRS use, and proposes to take preliminary steps to address this.

The Commonwealth supports the Commission's proposal to allow VRS use of six frequencies in the 173 MHz band currently designated for fixed remote control and telemetry operations, but would respectfully suggest that more frequencies are needed, and that the Commission should re-examine the level of actual use on the 170-172 MHz band forest firefighting channels before declining to permit their use for VRS public safety operations.

With respect to the specific questions raised in the Notice of Proposed Rulemaking, the Commonwealth would note as follows:

The Commonwealth strongly supports the use of public safety mobile repeater station (VRS) operations on the six 173 MHz remote control and telemetry channels, but believes that these six channels are not adequate to support current use or future needs of public safety for VRS frequencies. The need for communications with public safety officers, out of their vehicles, whether inside office buildings or in rural areas, cannot be questioned. High-quality portable radio communications signals with an extended range facilitated by a VRS are critically important to maintain communications with those police, fire and rescue personnel in the field.

Frequencies in the 150-159 MHz band are not suitable for VRS use because of heavy use by existing mobile base operations. We believe that spectrum congestion is the problem more than frequency separation, but the net result is that VRS communications are not practical on these channels.

In looking for additional frequencies, we believe that the use of VRS is so critical to public safety officers in the field that VRS use should be given priority over otherwise worthy uses or potential uses of the spectrum.

We would also suggest that the Commission explore whether adjacent broadcast television spectrum might be used by public safety for VRS operations outside the service contours of the broadcast station. For example, use of broadcast television Channel 7 (in the174 to 180 MHz band) by public safety might be feasible (without changing public safety mobile radio equipment or VRS frequency settings) in geographic areas outside of Channel 7's normal broadcast contours.

With respect to the question of shared use by VRS of the 173 MHz remote control and telemetry channels, we believe that exclusion zones would work well in protecting critical industry telemetry. Such zones could be defined by point and radius, latitude and longitude boundaries or perhaps most conveniently, by city, county or town boundaries. Smaller area VRS licensees such as county or city public safety units should be able to share a single channel coordinated. Statewide or larger agency VRS users would likely need to license some or all of the six channels, and could train personnel as to which channel could be used in which locations. We believe that VRS licensees should be able to avoid using restricted co-channel frequencies in exclusion zones with a high degree of accuracy.

We would have no objection to having exclusion zone conditions added to VRS frequency applications, but agree that where the incumbent telemetry user has consented, or the VRS licensee and the incumbent telemetry user are the same, any exclusion zone restrictions would not be necessary. Where there is no incumbent telemetry user, or any incumbent telemetry user ceases use of the frequency or loses its license, we believe that the pressing public

safety need for improved VRS use should allow the public safety VRS user to have superior rights over any subsequent telemetry users without an exclusion zone restriction.

The Commonwealth believes that a wide area or statewide applicant should be able to apply for multiple telemetry frequencies, to provide wide area coverage while avoiding interference with local exclusion zones. For example, the Commonwealth believes that it would need at least four frequencies, and preferably the use of all six, to cover the Commonwealth, and could establish standard internal operating procedures to co-ordinate these frequencies and avoid local exclusion zones.

With respect to the power limit increase from 2 watts to 5 watts, the Commonwealth continues to believe that the power level of the vehicle transmitter should match the power level of the portable VRS unit, and that 5 watts power is necessary to maintain adequate in-building or rough terrain communications. We would also note that when using lower frequencies, a 5 watt signal is not at the same effective power as it would be at higher frequencies (absent an antenna adjustment, which will not occur with mobile units), so is less likely to cause interference than in other circumstances.

With respect to the technical solutions (such as surface acoustic wave, or SAW, filters) and use of other public safety bands which were suggested, we believe that the equipment replacement or addition and related costs would make this impractical. There may be technical solutions and miniaturization available in a consumer cellular world, but the VRS market is too small to attract serious vendor efforts which could be implemented at an affordable price. The suggestion of a wide range of frequencies in other bands would require separate portable radios (not practically or economically feasible) or buying dual-band portables that could operate on both bands simultaneously (perhaps a technical solution, but not a practical solution absent funding to pay for thousands of such units). In-band repeaters are necessary because we want

the portable unit to first communicate with the VRS in the motor vehicle, but if that link is lost due to an obstruction and a tower is nearby, with an in-band repeater the portable unit can maintain communications directly through the tower. Cross-band repeaters cannot provide this communication back-up.

## CONCLUSION

Mobile Repeater Stations (VRS) are a critical tool for public safety users who must go outside their vehicles or outside fixed locations. The number of VHF frequencies available for statewide VRS use should be increased, to allow first responders to select the best channel for VRS operations, least likely to cause interference and with maximum range.

The Commonwealth supports any Commission action necessary to make these additional channels available for public safety use, particularly by statewide agencies, and urges that the technical rules governing their use reflect practical considerations including necessary power levels and cost practicality to ensure maximum efficiency and utilization. Protecting first responders in the field and helping them to carry out their public safety mission should be approached from a practical standpoint.

Respectfully submitted,

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF STATE POLICE

By _____

Peter E. Broadbent, Jr. (VSB 15962)
Christian & Barton, L.L.P.
909 E. Main Street, Suite 1200
Richmond, VA 23219
(804) 697-4109
Attorney for Commonwealth of Virginia
Department of State Police

Dated: December 30, 2013

**CERTIFICATE OF SERVICE**

I hereby certify that on this 30th day of December, 2013, a copy of the foregoing Comments of the Commonwealth of Virginia was sent by email to Thomas.Eng@fcc.gov.

Peter E. Broadbent, Jr.

#1521915v2

#1521915